

subordinate to him, concerned in its erection. The late rainy season was one of uncommon violence, and had just closed when our survey was made, and the soil far and wide was either inundated or saturated with moisture. Nothing could have more searchingly tested the strength and solidity of a newly erected edifice ; but not a crack or symptom of yielding was to be seen, externally or within, throughout the whole extent of this fabric ; and we conclude our remarks upon it with the expression of a grateful anticipation, that a lengthened durability awaits what we have represented as so pre-eminently worthy of a lasting preservation.

In conclusion, we would here recapitulate, in a few words, the opinion to which our inquiries have led regarding the three points to which reference is made in the second paragraph of our report.

As to the execution of the works, our verdict after a careful examination of all that presented itself to our view, is one of unqualified approval and commendation.

A plan of the premises with which the architect has kindly furnished the Committee, is appended ; and will render intelligible at a glance the relative sites of the different buildings forming the subject of this report.

We have, &c.

(Signed) R. H. RATTRAY,
 „ W. CRACROFT,
 „ HENRY DEBUDE,
 „ W. R. FITZGERALD.

CALCUTTA,
 10th Nov., 1838.

ART. IV.—*Researches on the Gale and Hurricane in the Bay of Bengal on the 3rd, 4th, and 5th of June, 1839 ; being a first Memoir with reference to the Theory of the Law of Storms in India.* By HENRY PIDDINGTON.

PART I.

The notices of Colonel Reid's Book on the Law of Storms, which appeared in the Calcutta papers and Edinburgh Review, had much excited my attention ; for the subject was, to me, one connected with many associations of early life, and more especially with one instance in which to the veering of a hurricane alone I owed my safety from shipwreck, after cutting away the mainmast of a vessel which I commanded.

Hence, having some leisure when the tempest of the 2nd to the 6th of June, 1839, occurred off the Sand Heads, I was induced to undertake the investigation of its different phenomena, with a view to see how far they would accord with the theory of the Law of Storms.

The sources from which I had to obtain my information were the logs of fourteen vessels which arrived at Calcutta, having felt the effects of the gale or of the hurricane; the reports of the Pilot and Light vessels, kindly furnished to me, with the permission of Captain Harrington, by my worthy friend Captain Clapperton of the Bankshall; and accounts obtained from Balasore, Poree (Juggernaut), Masulipatam, and other places, in all about thirty different authorities.

These sources form the amount of what was available here; but, that the inquiry might be as complete as possible, I addressed the following letter to the President of the Calcutta Chamber of Commerce.

TO R. H. COCKERELL, ESQ.

President of the Calcutta Chamber of Commerce.

SIR,—I beg to state that I have undertaken the investigation of the course and effects of the gale of the 3rd, 4th, and 5th instant, with reference to the theory of Colonel Reid on the Law of Storms.

I have applied, personally or by letter, to most of the captains or consignees of the inward-bound vessels which were exposed to it; and with the permission of Captain Harrington, and kind assistance of Captain Clapperton, shall obtain from the Bankshall reports from the H. C. Pilot and Light vessels. My chart is already drawn, and I am only waiting for the logs and reports.

So far, I trust, we shall be able to embody all the information which can be obtained here, and perhaps furnish a valuable supplement to Col. Reid's book; but it is evident that our work will not be complete without the statements to be obtained from the logs of the homeward-bound ships from hence; which, having stood to the south-eastward on leaving their pilots, were more towards the middle of the Bay than the inward-bound ones, whose track is toward Point Palmiras.

It is therefore my intention to print the information obtained here, with a lithographed chart, and to forward it to the President of the East India and China Association, by whom it will be forwarded to Col. Reid if in London, or if absent to Mr. Babbage; to whom I am, by the kind assistance of Sir Edward Ryan, allowed to refer; and who will take up the completion of the investigation, or refer it to competent hands.

But it has occurred to me that less attention might be paid to the application of an individual than to that of a public body; and I therefore take the liberty of addressing you, Sir, as President of the Chamber of Commerce, to request that it will be pleased to direct its Secretary to write to the Chambers of Bristol and Liverpool, the East India and China Association, and the owners and commanders of the vessels in the accompanying list, praying from them their

exertions in collecting and transmitting the required information to the President of the East India and China Association. I add a draft of a letter which states what are the points on which it is desired.

‘It is unnecessary for me to add that, to a naval and a commercial nation, the value and importance of a correct knowledge of the laws by which storms are governed is such, that, in the words of Sir John Herschell ‘it cannot be overrated;’ and this I doubt not will excuse my intruding upon you and the Chamber for your kind assistance.

‘I am Sir,

‘Your obedient servant,

‘H. PIDDINGTON.’

CALCUTTA,

June 25th, 1839.

List of Homeward-bound vessels from Calcutta, the logs of which it is desirable to obtain for the investigation at home.

<i>Vessels' Names.</i>	<i>Commanding.</i>	<i>Left the Pilot.</i>
Ship Marian,	T. Henry, ..	22nd May, 1839.
Barque Cape Packet, ..	C. Lamb. ..	22nd ..
F. Ship Emma,	J. A. Bonamour,	
Barque Bengal,	J. Marjoram, ..	23rd ..
Ship Mobile,	D. Ogilvy, ..	23rd ..
Barque Lloyds,	E. Garrett, ..	24th ..
Barque Renown,	D. M'Lean, ..	24th ..
Ship Gloucester, ..	S. E. Crook, ..	24th ..
Barque Gentoo,	H. Dodds, ..	26th ..
Ship William Nicol, ..	J. Potter, ..	26th ..
Barque Augustus, ..	A. J. Gordon, ..	27th ..
Barque Elizabeth, ..	J. Deivar, ..	29th ..
Barque Clydesdale, ..	C. Davis, ..	29th ..
F. Barque Appollon, ..	Langlois, ..	31st ..
Brig City of Aberdeen,	J. Monro, ..	31st ..
Ship Frances,	J. J. Johnson, ..	2nd June, 1839.

DRAFT OF A LETTER TO COMMANDERS AND OWNERS.

SIR,—I am directed by the Chamber of Calcutta to state that Mr. Piddington, of this city, has undertaken the investigation of the course and effects of the gale experienced in the Bay of Bengal between the 2nd and 6th June, 1839, with reference to Colonel Reid's theory of the Law of Storms. The immense importance of this subject to commerce and navigation it is not necessary to point out. All the information collected here will be printed and sent home with a litho-

graphed chart, but it is evident that the inquiry can only be completed by having the tracks and weather experienced by the ships homeward-bound from hence also laid down upon the chart; and I have therefore to request that as _____ of the ship _____ you will be pleased to forward, free of expense, the information requested below to A. H. De Larpent, Esq., President of the East India and China Association, by whom it will be placed in the hands of Colonel Reid, or, in his absence of Mr. Babbage, to complete the investigation begun here.

The information desired, is—

1. Copy of the ship's log from the Pilot to 15° north latitude, with any information obtainable from the journals of the captain, officers, or passengers.
2. Notes of the heights of Barometer, Thermometer, and Simple-someter; these are very desirable.
3. Peculiar appearance and states of the weather as to clearness, heavy dark clouds, &c., as noted at the time, or from recollection.
4. Electrical or other phenomena, as remarkable lightning, water-spouts, &c. and generally the most detailed information which can be afforded, particularly from the 2nd to the 6th June, 1839. The more details the better.

Your's, &c.,

Secy. Calcutta Chamber of Commerce.

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 TO H. PIDDINGTON, ESQ.

SIR,—I am directed by the Chamber of Commerce to acknowledge the receipt of your letter of 27th ultimo, explaining how you are engaged in tracing the course and effects of the late gale in the Bay of Bengal, to ascertain how far the phenomena observed will support the theory recently promulgated as to the Law of Storms. And I have to inform you, that the Chamber will be happy to address the East India and China Association of London, and the Chambers of Commerce of Liverpool and Bristol, to obtain the particulars required from the homeward ships to complete the interesting investigation which you have undertaken.

I am, Sir,

Your most obedient servant,

W. LIMOND, *Secretary.*

BENGAL CHAMBER OF COMMERCE,

July 1st, 1839.

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There was no other nautical source from which information could be obtained. I made a public request, in the newspapers, for the heights of barometers at noon from the captains who had obliged me with their logs, so as to compare these with the register kept at the Surveyor General's Office, and obtain thereby, as nearly as possible, the correct barometrical state of the atmosphere during the gale; for it was evident that, if one barometer had an error above, and another below the truth, their difference would appear much greater than it really was. In only one or two instances was this request attended to.

As stated above, I found on the part of every public officer, as well as on that of the merchants and agents whom I addressed, the greatest readiness to assist me, and this was also the case with the majority of the captains of ships; some of whom seemed to take a pleasure in affording all the information they could furnish, accompanying their logs with detailed notes; but a few were sadly churlish, and had to be written to or called upon three or four times, before they could be persuaded to take the trouble of furnishing me with the extract of the four or five days' logs, which was all that was required;* and others, still more provokingly, having given me a valuable extract, paid no attention to my repeated applications for further information on points which would evidently have been of the greatest interest. I abstain from mentioning names. But in one instance I called and wrote *seven* different times, to obtain further notes, or a sight of the ship's log book, and without success! The subject was new to some, and they were not aware of its importance. "I don't think they will make much of it" was the remark of more than one; until what *had* been "made" of it was explained to them. Unfortunately indisposition prevented me latterly from going on board of the few vessels which have thus escaped me. There is, it is true, some excuse for men so hurried and vexed as commanders of ships, having to discharge and re-load in Calcutta, often are; but I trust on a future occasion that, as I shall elsewhere suggest, authority will be given to the Master Attendant to compel the fulfilment of this public duty; so exceedingly trifling in itself from each individual, and yet so deeply important to the community at large, and indeed to the very individuals from whom it is required, did they rightly understand their own interests.

It will be necessary first to place upon record the materials, before proceeding to the deductions they afford; but to do this within a more

* The answer to my second or third chit in one instance is worth inserting.

"MR. PIDDINGTON,

Calcutta.

"Sir,—I received your note, but I have not time to attend to such trifles. But if you call on board the ship, in all probability the Mate will allow you to see it." —

convenient compass, and to the landsman in a more readable shape, I have, when the captains of vessels themselves have not given me a summary, made one from the logs, comprising all that is essential to our purpose. The seaman will, I hope, be satisfied when I say that I have commanded a vessel, and have therefore I trust omitted nothing of consequence. The logs themselves will be sent to Europe for the use of Mr. Babbage or Col. Reid.

No. 1.—*In Calcutta.*

The Meteorological registers from the Surveyor General's Office—the notes on the weather I have added as it appeared within the town.

1839.	Bar. at Noon.	Ther.	Winds.
June 1st	29,536	92·7	NE. Cumuli, { Squalls from the NE. with rain.
2	„ 475	90·8	EbS. Cum. { Strong squalls and rain.
3	„ 428	89·10 { Fresh gales with squalls.
4	„ 400	86·7	EbN. { A gale with very severe squalls & rain.
5	No Registers.		ESE. { Strong squalls veering to SEd.

No. 2.—*Diamond Harbour. Latitude 22° 11'.*

On the 1st June, Light variable airs. 2nd, Variable, cloudy, and frequent rain. 3rd, NE. breezes and rain. 4th, Strong NNE. breezes and frequent rain. 5th, Strong gales and squally East to SSE. and heavy rain. 6th, Wind at SSE. and cloudy. Thermometer from 1st to 6th 83° to 85°.

No. 3.—*Kedgerree. Latitude 21° 52' north.*

June 1st.—Light variable Easterly winds, cloudy, and rain, thunder, and lightning. 2nd, Cloudy, N. Easterly squalls and rain with calms, heavy rain, thunder and lightning. 3rd, Heavy squalls from North to East and rain, very unsettled appearance. 4th, Heavy Easterly squalls and rain, unsettled weather. 5th, Smart gale from SE. to E. and rain. 6th, Strong breezes, SE. to S. and cloudy.

No. 4.—*Hon'ble Company's Upper Light Vessel "Hope," A. C. Hudson, in Latitude 21° 26' north.*

1st June, *Civil Time*.—Winds light and variable all round, with some rain. 2nd, Light winds during the first part; at noon heavy squalls from the East, with rain and thunder; latter squally, with wind from the Northward at times. 3rd, First part variable and squally from E. to N.; in the morning, wind increasing from NE. with heavy squalls; noon wind ESE. inclining to a gale; at sunset gale from E., and during the night from ENE. with heavy sea; vessel riding with 160 fathoms cable. 4th, Gale continuing in heavy gusts from Eastward and shipping seas fore and aft. Till noon the same weather, but wind at ESE.; at 8 p. m. gale veering to SE. with dull gloomy weather, and at midnight gale at SSE. 5th, To day-light gale blowing very hard at SSE. veering latterly to S. in heavy squalls, with dismal weather and a heavy sea on; vessel shipping water fore and aft; at noon gale decreasing, with rain at sunset. Toward midnight strong breezes at S. with very heavy sea.

I shall in another part of this paper refer to the very instructive barometrical observations annexed to this log, which are highly creditable to Mr. Hudson's attention.

No. 5.—*Hon'ble Company's Lower Light Vessel "Beacon," Latitude 21° Longitude 88° 27'—J. Davenport, Commander.*

1st June, *Civil Time*.—A. m. light winds E. to NE. with heavy clouds to the SW., middle and latter parts moderate breezes, NE. to ENE. cloudy, unsettled weather and a heavy swell.

2nd.—Mostly moderate ENE. breezes, with cloudy unsettled weather, and a heavy sea rising; at midnight blowing strong; heavy squalls from ENE. with rain, thunder and lightning.

3rd.—Wind mostly from ENE. veering latterly to E. in the squalls. a. m. blowing hard, and increasing latterly to a gale, with a heavy sea; vessel shipping water fore and aft. 4th, Gale veering from ENE. to E. and ESE. with severe squalls and a heavy sea; every appearance of a heavy gale; middle and latter parts blowing a gale SSE. to ESE. with heavy squalls of wind and rain; a heavy sea, and dark, dismal, threatening appearance all round. Kept the whole of the crew on deck during the night; riding with 200 fathoms of cable. 5th, Gale moderating, but still blowing heavy and in hard squalls from SSE. to SE. with a heavy sea; latterly wind from SSE. to S. blowing hard and in squalls, with dark passing clouds and heavy sea;

vessel rolling and pitching very much, riding with 200 fathoms of cable. 6th, Strong southerly breezes and squally.

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 No. 6.—*H. C. Pilot Vessel "Jane."\**

1st June, 1839. *Civil Time.*—On the cruising station off Point Palmiras, winds light and variable, cloudy to the North and Eastward. 2d June, Throughout fresh breezes and squalls with rain from the Northward, and threatening appearance to the Eastward, anchored near the Floating Light Beacon. A strong current to the Westward. 3rd June, Throughout strong gales with rain and very threatening appearance to the NE. 4 A. M. Fresh gales from NE. Noon, gale increasing; riding with 170 fathoms cable. 4th June, Throughout hard gales E. to ESE. with heavy rain and threatening appearance all round; noon, blowing hard from E. to ESE. wind SE. in squalls with heavy rain and threatening appearance. Vessel driving, let go a second anchor. 5th, Strong gales from SE. to S. heavy rain and threatening weather, latterly squally from SSE. to S. 6th, Moderate breezes from South.

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 No. 7.—*H. C. Cruizer "Amherst," J. Paterson, Esq. Commander.*

Memorandum of the state of the winds and weather from the 29th May to the 6th of June at the head of the Bay of Bengal, as experienced on board the H. C. Ship "Amherst" on her voyage from Arracan to Calcutta, 1839.

29th. Started from Akyab at day-light with freshening breezes from E. to NE. and rain at intervals; the mountains covered half way down with thick white clouds; at sunset weather much clearer, the sea smooth, the wind decreasing, throughout the night very fine.

30th. The weather become perfectly clear, without rain; the same appearance in every direction; horizon interspersed with very light still clouds, light Easterly airs and calms, sea smooth, the ship going from one to three knots per hour; at 8 P. M. sharp flashes of lightning to the ENE.; the night continued fine and very clear, little variation in the wind. Long. 90° E. lat. 20° 39'.

31st. Day-light sharp lightning to the Eastward, wind increasing from that quarter; the weather began to settle down for rain at noon, variable sharp squalls from SE. to NE. with a good deal of rain,

* The European reader, into whose hands this may fall, requires perhaps to be told that the Honorable Company's Pilot vessels, at the mouth of the Hooghly, are not Pilot-boats, but fine stout Bombay-built Brigs of 250 tons, perfectly well manned and provided in all respects, and officered by able seamen duly educated to their profession.

thunder and lightning to the Eastward ; sunset, the wind steady from the Eastward, with smooth sea, occasional showers during the night, lightning very vivid to the Eastward, sometimes sharp flashes of lightning to the South.

1st June. The weather very similar to yesterday, more sea, very sharp lightning during the night to the NE. ; 8 P. M. Outer Light Vessel bearing NNE. about nine miles distant.

2nd. Heavy squalls from NE. to NNE. during the early part of the morning ; 10 A. M. wind steady from ENE. weather more hazy and sea rising ; 4 P. M. wind NE. by E., sharp lightning to the ENE. ; sunset, Outer Light Vessel SE. by E. six miles ; 8 P. M. Light Vessel E. by N. ; heavy squalls from the NE. with sharp rain, ship under double reefed topsails, the weather threatening throughout the night.

3rd. Day-light heavy squalls from the ENE. ship under double reefed topsails, sea rising fast with rain ; noon, off the tail of the Eastern Sea Reef ; gale increasing from ENE., ship standing out under three reefs in the topsails, top gallant yards on deck ; at 8 P. M. split the topsails, reefed the courses, the wind steady from ENE., heavy sea and the gale still increasing with rain, no lightning up to midnight.

4th. 2 A. M. ship reduced to main courses, wind ENE. heavy gusts of winds and rain ; 4 A. M. a hard gale at ENE. ship labouring much ; 6 A. M. gale still increasing ; at 11 A. M. ship under bare poles, wind ENE. ; 3 P. M. wind E. ; 3° 30' P. M. wind ESE. ; 4 P. M. wind SSE. ; blowing a perfect hurricane ; 6 P. M. wind South, a tremendous cross sea ; ship at this time off "Codgone Point," up to midnight blowing a perfect hurricane from South to SSW. no lightning nor thunder.

5th June. 2 A. M. gale began to moderate from SSW. with heavy cross sea ; noon, longitude 87° E. latitude 20° 3' N. ; ship throughout the remainder of the day under foresail and close reefed main topsail with dry weather but very hazy, the sea very high.

6th. The wind steady from SSW. and hazy.

Remarks.—The 30th May led me to be very watchful of the weather, it became so extremely clear and such a sameness in the appearance all round ; the stars very bright, the clouds stationary and of a very light appearance, the lightning very very sharp, the noise of every thing on board seemed to be more than ordinary. What was most remarkable, the wind continued so steady from the Eastward at one time on the 4th that I had most serious apprehensions of the ship drifting on shore upon the western shores of the Bay ; the wind shifted suddenly, otherwise nothing but her anchors could have saved her.

J. PATERSON, *H. C. Ship "Amherst."*

No. 8.—*H. C. Pilot Vessel "Krishna," Mr. J. Crook, Branch Pilot, Commander,—at the Cruising Station.*

2nd June, 1839. *Civil time.*—NE. to E. squall and threatening to the Eastward. 3rd June A. M. freshening fast NNE. to NNW. with dirty weather; noon fresh gale NNW. to NNE. at $20^{\circ} 10'$; weather threatening stood off the land. 4th Wind N. by E. at noon hard squalls and rain; gale increasing to 8 P. M. Midnight wind N. and gale apparently breaking. 5th A. M. Threatening again, and an increasing gale NNE. to NNW. till noon. P. M. hard gale, hove too under main topsail and fore topmast staysail, at 8 under bare poles; a man washed overboard but saved. Wind from N. to W. and SW. 1 P. M. *a dead calm!* with a high cross sea rising perpendicular, caused by a heavy roll coming up from the SW. against the northerly one; vessel labouring very much; at $1^{\circ} 30'$ P. M. wind suddenly veered round to the SW. and blew a furious gale with severe squalls and heavy rain till night. 6th A. M. gale moderating. At noon clearing up. Wind WbS.

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No. 9.—2nd June, 1839.

Brig "*Sarah*" from Rangoon stood in on the evening and took a pilot on board, but the weather being suspicious stood out to seaward.

3rd June. Throughout the night hard squalls ENE. and rain. At day-light every appearance of an approaching gale, high sea, and hard squalls; noon, lat.  $20^{\circ} 30'$  N. in 46 fathoms (about long.  $88^{\circ} 02'$  E.) Strong gales ENE. and high sea; at midnight hard gale about E.; vessel struck by a sea abaft, and jolly boat carried away.

4th June A. M. constant hard squalls and gale about ESE. till noon; P. M. more moderate; at 2 P. M. wind veered to the Southward with rain; at 4 P. M. increasing gale, furled all sail, hove too under bare poles; at 9 P. M. Bar.  $28^{\circ} 88'$ ; and to midnight hard gales veering round. Barometer  $28^{\circ} 56'$ .

5th June. Day-light moderating; towards noon fresh gales SSW. and clear with high sea. Lat.  $19^{\circ} 42'$  N.

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No. 10.—*Honorable Company's Pilot Vessel "Saugor," Mr. J. Cearns, Branch Pilot, Commander.*

2nd June, *Civil time.*—At anchor in nineteen fathoms, off Point Palmiras bearing about NWbW. 1 P. M. a squall from the Eastward; till midnight pleasant.

3rd June.—A. M. squalls from NE. and ENE.; at noon strong breezes and a heavy swell from SE., but wind N.; gale freshening, and at midnight from NE.

4th June.—Increasing fast from NE.; at noon NE.; 8 P. M. ENE. a hard gale at E. and heavy sea at midnight.

5th June. 4—A. M. wind E.; noon ESE.; hard gale veering to SE. and SSE.; moderating at midnight. On 6th June A. M. wind South.

No. 11.—*Pooree, or Juggernaut Pagoda, 19° 48' N., 85° 45' E.*

Letter from Dr. Cumberland, Surgeon of the Station, who after regretting that he can give but imperfect information, says,—

“The 2nd of June was very cloudy; about 11 A. M. we had a heavy squall from the E. afterwards a succession of others, from almost every point of the compass. At night it was blowing hard from the NE.; and on the 3rd, we had a hard gale from the N. with heavy clouds and rain. On the 4th, still blowing a hard gale from the N. with heavy clouds and incessant rain; at 5 P. M. the wind shifted suddenly to the W. and gradually veered round to the SW. after which it moderated, still however blowing a gale. On the 5th, the gale continued from the SW. very cloudy but no rain. On the 6th and 7th, fresh breezes from SW. with very cloudy weather. On the 8th, light winds. The quantity of rain which fell on the 2nd of June was 1 inch; on the 3rd, 2 inches and 1-10th; on the 4th, 4 inches and 9-10ths.

POOREE, 6th July, 1839.

No. 12—*Letter from Captain Hookey of the ship “Mary Somerville,” 15th June, 1839, accompanying his log.*

I have much pleasure in communicating any information in my power respecting the gales in the Bay of Bengal on the 3rd, 4th, and 5th June, in which the “Mary Somerville,” and several other vessels happened to be. Although the gale with us appears to have been of short duration, it was very severe. We experienced ever since crossing the equator, (which we did on the 20th May) hot sultry weather, with variable winds from N. to W. chiefly. On the 3rd June, at noon, latitude 19° N. longitude 85° 29', wind very unsteady, both in strength and duration, with heavy squalls chiefly from NW.; occasional heavy rain. Ther. 86°, Bar. 29° 25', Simp. 29° 40'.

4th June.—Fresh gales from W. with heavy rain; at noon Ganjam NWbW. twelve miles. Ther. 86°, Bar. 29° 15', Simp. 29° 30'. It continued to blow a fresh gale but not a severe one, wind from W. to WSW.; at this time a heavy sea from SE., ship lurching very much.

5th June.—Strong breezes; ship under double reefed topsails, wind SW.; at noon Juggernaut Pagoda NE $\frac{1}{2}$ E. eighteen miles; at 5° 30' P. M. the Black Pagoda bore NWbW $\frac{1}{2}$ W. fifteen or sixteen miles; wind now increasing to a severe gale at S.; hove the ship too under easy sail; head from ESE. to EbN. but the wind drew gradually round to the SW.; the sea continued at SE. and the ship laboured most tremendously; at midnight it began to moderate, and blew a fresh breeze from SW. which carried us to Point Palmiras by 5 o'clock P. M. on 6th June. When the severe part of the gale commenced at 5° 30' P. M. 5th June, the Black Pagoda bore NWbW $\frac{1}{2}$ W. sixteen miles; the Ther. was 86°, Bar. 29° 10', Simp. 29° 25'; the lowest we had it; and it began to rise at 10 A. M., Simp. first, then Bar. about an hour after. We must have escaped a great part of the gale as the SE. sea was very high, but we never had the wind from that quarter; the severe part with us was from SSW.

Captain Hookey says in another letter to me—the reason of our laying too so much was not caused by stress of weather, but from our having carried away our fore topmast, and fore and main topgallant masts in a severe squall from the NE. on the 2nd in the afternoon; I therefore laid too till the ship was again prepared to run for the Sand Heads ———.

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No. 13.—Ship "Justina," Extract from her log forwarded by Capt. T. H. Bentley.

3rd June, 1839.—Nautical time.—Monday night at 2 A. M. squally; in royals and flying jib (ship's head NEbE. wind NNW.) in fore and mizen topgallant sails. At 5 A. M. heavy appearance to the N. reefed the driver, sent down royal yards.

At 8 A. M., ship's head NE. wind NNW., gale increasing; in 2nd reef of the topsails; at 9 A. M. heavy squalls with heavy rain; up mainsail; at 10 gale increasing, up foresail, in mizen topsail; heavy squalls with rain; at noon ship's head ENE. wind N., furled mainsail, wore ship. Lat. Obs. 19° 14' N.

Tuesday, 4th June. Wore ship to the westward; at 1 P. M. ship's head WSW. wind NW. strong breezes and squally, close reefed the fore topsail, furled the fore sail; at 3 P. M. gale increasing, in 3rd reef of the main topsail, in driver; at 5 P. M. ship's head SWbW. wind NW. heavy cross sea running, ship pitching heavy; at 6 gale increasing fast with heavy squalls and constant rain.

At 7 ship's head SW $\frac{1}{2}$ W. wind NW.; at 9 ship's head SWbW. pitched bowsprit under, carried away the jib boom, fore topgallant

mast and main royal mast; cut away the jib and flying jibboom; made the fore topgallant mast fast to the topmast rigging; at 11 hard squalls with a high sea running. At midnight ship's head SWbS. wind NW. At 2 A. M. severe gale, with a tremendous sea running; at 3 ship's head SW. wind WbN. the fore topmast staysail blew to atoms, ship lying with the lee bulwarks under water; at 4 heavy gales with severe squalls and constant heavy rain; at 8 bent another fore topmast staysail; at 9 A. M. ship's head SbE. wind WSW.) at noon hard and severe gales, the fore yard arm at times in the water.

*Wednesday, 5th June.* At 1 P. M. ship's head south; wind WSW. at 3 a heavy sea filled the quarter boat, the fore davit gave way, let the boat in the water, cut away the after fall the boat being stove; a heavy sea with severe squalls; at 5 P. M. ship's head SbE. wind SWbW. more moderate; at 6 wore ship to the NW.; at 7 set fore trysail; at 8 ship's head WNW.; wind SWbS.; at 11 more moderate, set the foresail; at 1 A. M. ship's head NW., wind SW. brisk gales with passing squalls and rain; at daylight got the fore topgallant mast and royal mast on deck; at 8 set fore topsail; at 9 out 3rd reef of the main topsail; at 11 got all clear, at noon moderate and cloudy. Lat. by Obs.  $18^{\circ} 15' N.$  long. by Chron.  $85^{\circ} 11' E.$

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No. 14.—Ship "Ann Lockerby," Capt. Burt.—Extract sent.

Tuesday, June the 4th. In lat. $18^{\circ} 55' N.$ and long. $86^{\circ} 30'$ it commenced to blow heavy; the wind from N. to NNW. the height of the barometer was $28^{\circ} 75'$ and raining heavy; the gale still kept increasing till the morning of the 5th at 8 A. M. when it blew a complete hurricane, the wind at NNW. and it shifted round to WSW.; about noon the barometer was standing at $28^{\circ} 15'$; the ship at that time was in lat. $19^{\circ} 5' N.$ and long. $87^{\circ} 6' E.$ J. BURT.

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*No. 15.—Ship "Eden," Capt. W. D. Cook.*

*3rd June, Civil Time—*Lat.  $18^{\circ} 22' N.$  long.  $86^{\circ} 1' E.$  P. M. strong winds variable WSW. to WNW. with rain. Barom.  $29^{\circ} 40'.$  4 P. M. the same; with a heavy sea running; wind west; 8 P. M. increasing winds, in jib, mainsail, and mizen. Barom.  $29^{\circ} 30'$  ditto weather, wind N.; 4 A. M. strong winds and squally; wind NWbN.; 8 A. M. hard gales, wore ship to the southward, Barometer  $29^{\circ} 10'.$  noon ditto weather, sun obscured; wind West, under bare poles; 4 P. M. hard gales with heavy squalls and a tremendous sea running; wind SWbW. Barometer  $29^{\circ} 00'.$  *4th June.* Midnight blowing a perfect hurricane at WSW. without intermission. Barom.  $28^{\circ} 80'.$  4 A. M. ditto weather

Barom.  $28^{\circ} 70'$ ; 6 A. M. struck by a heavy sea which hove the ship on her beam ends, shifted a great part of the ballast, washed the man from the helm, and part of the bulwarks away. 8 A. M. ditto weather, ship labouring heavily; set a storm mizen staysail. Wind WSW. Barom.  $28^{\circ} 60'$ . Noon ditto winds, with continued heavy rain, Barom.  $28^{\circ} 60'$ ; 4 P. M. gale a little abated, set the main topsail close reefed. Barom.  $28^{\circ} 70'$ ; 8 P. M. heavy squalls with lulls at times. Midnight, more moderate; set the foresail. Barom.  $28^{\circ} 80'$  4 A. M. Out two reefs main topsail, and set the fore out double reefed; 8 A. M. set the reefed mainsail; wind SW. Barom.  $29^{\circ}$ . Noon, strong breezes and hazy with less sea. Lat. observation  $18^{\circ} 1' N.$  long. Chro.  $86^{\circ} 52' E.$  Barom.  $29^{\circ} 25'$ . *June 6th.* Moderate weather; got soundings under the Black Pagoda at 2 A. M.

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No. 16.—*Masulipatam, 15th July, 1839.*

DEAR SIR,—I have the pleasure to send you an extract from my Journal, we had neither thunder nor lightning, but there was a very heavy sea rolling in from the Eastward.

I have not a Simpiesometer.

RICHD. ALEXANDER.

Thermometer.		Barometer.		June, 1839.— <i>Masulipatam.</i>
Date.	Max.			Winds, &c.
June 1	87	29	700	From WNW. fresh, drizzling rain.
— 2	88	—	—	WNW. to SSW. do., very cloudy.
— 3	87	—	695	Ditto ditto ditto, drizzling rain.
— 4	83	—	633	Ditto blowing very fresh.
— 5	90	—	600	Ditto ditto ditto ditto.
— 6	91	—	625	Ditto to W. and SSW. very cloudy.

No. 17.—*Extract from the log of the Brig "Nine," Captain Denny, in the Bay of Bengal, June 1839.*

Saturday, 1st June, Nautical time.—Strong gale throughout, with heavy squalls and showers of rain, wind WbS. No observation. Lat. by account $14^{\circ} 7' N.$ long. $85^{\circ} 28' E.$, Bar. $28^{\circ} 7'$, Ther. 82° .

Sunday, 2nd June.—Heavy gale throughout, with constant rain and heavy squalls, wind WbS. No observation. Lat. by account $16^{\circ} 7' N.$, long. account $85^{\circ} 52' E.$ Bar. $28^{\circ} 6'$. Ther. 83°

Monday, 3rd June.—Strong gale throughout, with heavy squalls and rain. Wind WbS. No observation. Lat. by account $17^{\circ} N.$, long. $86^{\circ} 16' E.$ Bar. $28^{\circ} 6'$. Ther. 84°

Tuesday, 4th June.—First and middle parts strong gale, latter more moderate, wind WbS. Lat. by account $17^{\circ} 36'$, long. $86^{\circ} 43'$ E.

Wednesday, 5th June.—Fresh gale throughout, with heavy squalls and showers of rain. Lat. by observation $18^{\circ} 39'$ N., long. Chro. $88^{\circ} 18'$ E.: On getting an observation, found we had a set of 60' to the southward during the gale; wind S. W.

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No. 18.—*The ship "Elizabeth," of Glasgow, Captain Dewar; homeward bound, left the Pilot, according to her protest, on the 29th May.*

On the 2d June, in lat. about  $16^{\circ}$  N. and long.  $88^{\circ}$  E. she experienced a very severe gale from the SW. with a heavy cross sea; hove too; but the sea was washing over her continually. About midnight she was struck by a heavy sea on the quarter, which started the whole of her stern frame; she bore up with seven feet water in her hold to the NE. and on the 3rd again hove too with her head to the NW. The wind hauling to the SW. she bore up about NNW. for the Sand Heads but could only reach Laccam's channel, where the vessel was driven on shore and lost; the captain and crew reaching Calcutta in a state of great distress and exhaustion through the Sunderbunds.

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No. 19.—*Ship "Jumna," Captain Robinson.*

1st June, Nautical time.—Lat. $12^{\circ} 25'$ N. long. 85° E. dark gloomy weather, with much lightning to the NWbN. and NE. quarters, the wind freshening to a gale from W. or WSW. The barometer had been falling for several days before.

2nd June.—Lat. $15^{\circ} 20'$ N., long. $85^{\circ} 30'$ E. The gale continuing from W. with much rain.

3rd June.—Heavy gale from W. to WSW. generally; with lightning and ceaseless rain, and looking awfully dark to the NW. and N. The wind at times offering to shift in that direction, but never got further than WNW. and only remained there for a short time. Lat. $16^{\circ} 40'$ N. long. $85^{\circ} 30'$ E. at noon.

4th June.—The gale continuing, but blowing more in heavy squalls, with torrents of rain. The barometer $29^{\circ} 19'$ inches, lat. $17^{\circ} 10'$ N. long. $85^{\circ} 35'$ E.; p. m. more moderate; wind SW. fair, with hazy weather.

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No. 20.—*The Brig "Laurel Amelia" from Coringa towards Chittagong left Coringa roads, 3rd June, Nautical time, at 5 p. m. with light southerly breezes and clear weather; during the night the wind veered to West; at noon it was West, with drizzling rain and strong gales. Lat. and long. omitted in this log.*

4th June.—Westerly winds, strong gales, vessel under courses, steering Eastward. During the night increasing gale, ship labouring very much; daylight the same, and weather very threatening, with a heavy sea on; prepared every thing for bad weather; noon, hard gales. No observation. Lat. by acct.  $16^{\circ} 56'$  N. long.  $82^{\circ} 58'$  E.

5th June.—P. M. hard gales with drizzling rain, increasing at midnight to a hurricane from the Westward. Daylight, and till noon, scudding under bare poles and laboring very much. No observation; lat.  $17^{\circ} 22'$  N. long.  $83^{\circ} 44'$  E. by account.

6th June.—Towards sunset hurricane abating a little; at midnight moderating; daylight under the foresail; noon more moderate, set the topsails. No observation. Lat. by acct.  $18^{\circ} 19'$  N. long.  $84^{\circ} 29'$  E. On the 7th the weather fine.

It is clear that this vessel, being on the south side of the vortex made a fair wind of the hurricane; but the latitudes and longitudes must be wholly erroneous, since, though scudding before a hurricane from the Westward they give a NE. course made good along the shore! Captain Elson, of Chittagong, to whose politeness I am indebted for this log and that of the "Louisa" and "John William Dare," informs me that the last only is to be depended upon, as the Chittagong vessels are rarely provided with good instruments or able navigators. I have however felt myself bound to mark the track as here given, though I think it probable that on the 5th she was at least two degrees further to the Eastward, and I have therefore marked also her probable position.

The following very interesting remarks I received on the arrival of the "Mobile" from the Mauritius. It will be recollected that this ship was one of the outward-bound; having left her pilot on the 23rd May. I regret much that no latitudes and longitudes accompanied the first letter, so that I could only mark this vessel's drift approximatively on the chart as it was going to press; for this cause too this vessel is omitted upon the diagrams of the gale.

No. 21.—*Extract from the log of the ship "Mobile," on a voyage from Calcutta to Mauritius, forwarded by Captain Ogilvy.*

For several days prior to the 2nd June the weather was for the season of the year remarkably fine, and the wind instead of SW. was veering round the compass. We had reached the latitude of  $15^{\circ}$  N. long.  $84^{\circ}$  E. in seven days from the Pilot. On the morning of the 2nd the swell increased considerably from the South, and at noon the mercury in the barometer, which had remained for some days steady at  $29^{\circ} 90'$ , was affected, and commenced falling fast. At this time (noon) we had a moderate breeze from the NNW. and the appearance of the



weather indicated not the slightest change. The breeze in the afternoon gradually increased, and at 4 P. M. took in one reef of topsails; Barometer  $29^{\circ} 55'$ . At 6 P. M. a very heavy black cloud rose in the Eastward; and apprehensive that a gale would come from that quarter, I altered my previous course of SSW. to SSE. in order to get more sea room. At 8 P. M. the barometer had fallen to  $29^{\circ} 40'$ , and the wind a fresh steady breeze from the NW. with slight showers of rain: took in 2nd reefs. 11 P. M. The breeze completely died away, and for the next seven hours it was nearly calm, the barometer stationary, and the black cloud still hanging in the Eastward, with very vivid lightning issuing from it.

At 7 A. M. 3rd June the wind sprung up again from the NW. and commenced blowing so strong that all sail was taken in, excepting the close reefed main topsail; and the ship hove too. Noon, strong gale, with very heavy gusts of wind from the West. Bar.  $29^{\circ} 40'$ . Took the main topsail in, and spread a tarpaulin in the mizen rigging. 4th June do. winds and weather, with a very high sea; by account lat.  $15^{\circ} 50'$  N. longitude  $84^{\circ} 40'$  E. 5th June, wind veering to SW. and producing a tremendous cross sea, the ship rolling and labouring much. Bar.  $29^{\circ} 5'$ . latitude by account  $16^{\circ} 20'$  N.  $85^{\circ} 20'$  E. P. M. The Bar. rising, and the wind veering to SSW. with more moderate weather. The sea at this time, from the altering of the wind, was running in three or four directions, with immense crested tops which threatened instant destruction; but fortunately at this time it commenced raining heavily, which had a great effect in reducing the topping of the waves. On the 6th June, by observations latitude  $17^{\circ} 10'$  N. longitude  $86^{\circ} 15'$  E. Found that we had drifted to the NE. 200 miles.

D. W. OGILVY.

No. 22. Barque "Susan," Captain Neatby,—Nautical Time.

31st May.—Wind WbN. to WbS. Bar. P. M.  $29^{\circ} 60'$ ; midnight,  $29^{\circ} 55'$ ; noon  $29^{\circ} 50'$ , Ther.  $79^{\circ}$ . Strong gale increasing from yesterday, with violent squalls and rain every hour. Lat. noon  $12^{\circ} 47'$ , long.  $90^{\circ} 43'$  E.

1st June.—Wind WbN. to WSW. Bar. P. M.  $29^{\circ} 50'$ ; noon  $29^{\circ} 40'$ . Ther.  $79^{\circ}$  to  $76^{\circ}$  hard gale with constant heavy squalls and rain, with heavy sea, ship laboring much. At noon hard gale and heavy squalls. Lat.  $14^{\circ} 2'$  N.  $91^{\circ} 14'$  E.

2nd June.—Wind  $W\frac{1}{2}S$ . to WSW. Bar.  $29^{\circ} 40'$  to  $29^{\circ} 36'$ . Ther.  $79^{\circ}$  to  $78^{\circ}$ ; hard gale and violent squalls, with rain, and a tremendous heavy sea; ship laboring much, sent guns, provisions, &c. into the hold; ship lurching dreadfully. Lat.  $14^{\circ} 47'$  N. long.  $91^{\circ} 47'$  E.

3rd June.—Wind  $W\frac{1}{2}S.$  to  $WbS.$  Bar.  $29^{\circ} 40'$ ,  $29^{\circ} 33'$ , and  $29^{\circ} 40'$ . Ther.  $60^{\circ}$ ; hard gale with violent squalls and rain, and heavy sea throughout. Lat.  $15^{\circ}$  and long.  $92^{\circ} 14' E.$

4th June.—Wind  $WbS.$  to  $WSW.$  Bar.  $29^{\circ} 40'$ ; hard gale, violent squalls, rain and lightning; latterly the squalls more moderate. Lat.  $16^{\circ} 19' N.$  long.  $69^{\circ} 53' E.$  By observation find a current to the  $SW.$  at the rate of twenty miles per day for the last four days.

5th June.—Wind  $WSW.$  to  $SW.$  strong gale and squally, but moderating latterly, and the sea going down. Bar.  $29^{\circ} 40'$  to  $29^{\circ} 56'$ , lat.  $17^{\circ} 59' N.$ , long.  $88^{\circ} 34' E.$

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No. 23.—The ship "*Indian Oak*," Capt. Rayne, left Madras roads at 10 A. M. 4th June 1839, Nautical time, having a passenger on board for Vizagapatam. She ran up along the coast with moderate breezes, but on the night of the 5th to 6th June it was so very hazy that Capt. Rayne could not obtain an observation; the heavenly bodies being obscured. His barometer fell from $29^{\circ} 7'$ at 8 P. M. on the 5th to $29^{\circ} 6'$ at 4 A. M. on the 6th, the weather having assumed so very threatening an appearance, with a heavy jerking sea rising, that he prepared for bad weather, and kept under weigh whilst communicating with the shore, and landing his passenger at Vizagapatam; he had however no stormy weather. This vessel's log is important as marking, together with the memorandum from Masulipatam, that the gale was only *seen*, but not *felt* along the coast below Juggernath.

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No. 24.—The Barque "*Lady Macnaghten*," Captain George Hardwick, experienced a severe gale beginning with strong squalls from the West and heavy rain at noon 30th May 1839, lat.  $10^{\circ} 40' N.$  long.  $88^{\circ} E.$  By noon the next day, 31st May, in  $12^{\circ} 45' N.$   $87^{\circ} 14'$  she was hove too under close reefed main topsail, and continued so under storm sails on the 1st, 2nd, 3rd, and 4th June; wind from  $WbS.$  to  $SWbS.$  blowing a very severe gale with very heavy sea, causing the vessel to labour excessively and ship water over all. At noon on 4th, after which the gale moderated, she was in lat.  $14^{\circ} 51'$ , long.  $88^{\circ} 16' E.$  and found that during the gale she had experienced a current of about thirty-two miles per day to the  $SW.$  from the 31st May to the 4th June; on which last day the Barometer being then at the lowest, stood at  $29^{\circ} 17'$ .

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No. 25.—Brig "*Petrel*," Capt. Turcan, 1st June 1839. Nautical time.—At noon in lat. $5^{\circ} 13' N.$ long. $85^{\circ} 20' E.$ Bar. $29^{\circ} 30'$. Ther. $92'$, strong breezes from $WSW.$ and hazy weather.

2nd June.—Till midnight blowing strong. A. M. blowing hard with hazy weather and a heavy sea; large white clouds driving very quickly, but clearing at intervals; wind from WSW. to SW. at noon, when the lat. was $8^{\circ} 31' N.$, long. $85^{\circ} 50' E.$ Bar. 29° , Ther. 86° .

3rd June.—Hazy in the afternoon, and first part of the night strong breezes, W. to WSW. till midnight warm weather. A. M. Hard gale, WbS. and a heavy sea till noon. Lat. $11^{\circ} 26' N.$, long. $85^{\circ} 24' E.$ Bar. $29^{\circ} 48'$ Ther. 95° .

4th June.—Hazy throughout and exceedingly warm. Sea high and confused, and coming at times from the northward! Hard gales WbS. WSW. ship taking much water on deck. At noon, lat. $13^{\circ} 44' N.$ $84^{\circ} 50' E.$ Bar. $29^{\circ} 43'$. Ther. 86° .

5th June.—Wind WSW. to SW. P. M. Hard gales, but moderating latterly. A. M. confused sea from the northward, hazy; barometer falling at 4 P. M. to $29^{\circ} 30'$ but rising towards morning to $29^{\circ} 50'$. Ship and rigging covered to day with a fine red dust.* At noon, lat. $16^{\circ} 22' N.$ long. $84^{\circ} 34' E.$ Bar. $29^{\circ} 38'$, Ther. 86° .

6th June.—Strong and hard gales WSW. with hazy weather. At 11h. 30' made the land. Noon, lat. $18^{\circ} 30' N.$ long. $84^{\circ} 34' E.$ Bar. $29^{\circ} 40'$ Ther. 86° Sky clearing up, and sea going down with appearances of settled weather. Note. We had not a drop of rain from leaving the lat. of $2^{\circ} 30' N.$ on 29th May until in Saugor roads on the 9th June.

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No. 26.—Barque "*John William Dare*," Captain Gibson, at anchor off the Island of Cheduba in  $3\frac{1}{2}$  fathoms water; on 1st June, 1839. Civil time.—Lat. observed  $18^{\circ} 44' N.$ ; long. by three Chrons.  $93^{\circ} 50' E.$  Bar.  $29^{\circ} 80'$ , Ther.  $85^{\circ}$ . Latter part fine and clear. Bar.  $29^{\circ} 75'$ , Ther.  $84^{\circ}$ .

*2nd June.*—First part light breeze and clear, with lightning to the Southward; daylight freshening breezes, with flying showers of rain and light squalls, barometer falling. At noon strong breezes with squalls, and dark threatening appearance. Bar.  $29^{\circ} 40'$ , Ther.  $89^{\circ}$ . 2 P. M. Breeze increasing; preparing for bad weather. Bar.  $29^{\circ} 30'$ . Heavy sea rolling in from the Southward, ship rolling frightfully. 8 P. M. Breeze increased to a gale with tremendous sea. The ship, though drawing only eleven feet six inches water, struck by the heel and unshipped the rudder, secured the rudder, slipt the chain, cast to seaward, and an-

\* This is a singular phenomenon. The nearest point of the coast directly to windward of the ship is about Coringa, distant 400 miles. It would seem to indicate that the gale had blown over the table land of the Deccan, where it would probably find plenty of red dust. The Laurel Amelia and Indian Oak seem thus to have been sheltered by the Coromandel range of hills, as we see in the land breezes in an offing in fine weather.

chored again in four fathoms water. Latter part weather as before. Bar.  $29^{\circ} 30'$ .

*3rd June.*—First part heavy gale from SSE. with a tremendous sea ; vessel labouring heavily, and making thirty inches of water per hour. Daylight, barometer rising ; strong gale, with heavy thunder and rain, and dark heavy appearance all round ; noon, gale abating, with heavy squalls, thunder, lightning, and rain. Bar.  $29^{\circ} 50'$ , Ther.  $84^{\circ}$ . Latter, gale abating, with heavy rain and a high sea. Bar.  $29^{\circ} 60'$ .

*4th June.*—First part strong breezes with squalls, thunder, and heavy rain ; daylight, breeze abating ; Bar.  $29^{\circ} 75'$  Ther.  $85^{\circ}$ . Shipped the rudder, and sent up topgallant yards and masts. Latter part smart breezes. Bar.  $29^{\circ} 80'$ .

*5th June.*—Smart breezes from SE. and a high sea rolling in from SW. ; made sail for Chittagong. The direction of the wind has been omitted in this log on the 1st, 2nd, and 4th, but it seems evident that it was from the S. or between S. and SSE. throughout. The log is very valuable, as shewing that the gale here, on the extreme Eastern side of the Bay, was at its height in the night between the 2nd and 3rd June.

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No. 27.—Barque "Louisa," in the Harbour of Akyab.

Saturday 1st June, 1839.—Moderate breezes and cloudy weather. Direction of the wind not stated, and nothing further in the log.

2nd June, 1839.—Commences with fresh breezes and cloudy weather ; middle and latter parts, hard gales with small rain ; winds Easterly.

3rd June, 1839.—During these twenty-four hours brisk gales and showers of rain ; winds Easterly.

4th June.—During these twenty-four hours the same as yesterday.

5th June.—During these twenty-four hours East winds with gales, and falls of rain.

6th June.—For these twenty-four hours, SW. winds and moderate.

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To exhibit the foregoing Logs in a collected view, for ready reference, I have arranged all the principal facts in the following series of Tables from the 1st to the 5th June, exhibiting thus at one view the weather experienced by the different ships, and their positions *at noon* on the same day. No account has been taken of the small difference of apparent noon occasioned by the difference of longitude, as there is nothing which requires this degree of exactness. It will be remarked that throughout the difference between the Easterly and Westerly winds occurs about lat.  $19^{\circ} 30'$ . The log of the "Indian Oak" is omitted, as not being of importance.

*Tabular view of the Gale and Hurricane in the Bay of Bengal, from 1st to 5th June, 1839.*

| Date,<br>Civil time. | Names of Vessels and Places.          | Wind and Weather.                                                       | Lat. N. | Lon. E. | Bar.  | Simp. | Ther. | Remarks.                                               |
|----------------------|---------------------------------------|-------------------------------------------------------------------------|---------|---------|-------|-------|-------|--------------------------------------------------------|
| June 1st.<br>Noon.   | Calcutta, ....                        | NE. Cloudy and squalls at times,                                        | 22.34   | 88.22   | 29.54 | ..    | 92    |                                                        |
|                      | Diamond Harbour, ..                   | Light variable airs and Cloudy,                                         | 22.11   | 88.11   | ..    | ..    | 84    |                                                        |
|                      | Kedgerree, ..                         | Do. do. Easterly do. do. thunder<br>and lightning, ....                 | 21.52   | 87.59   | ..    | ..    | 86    |                                                        |
|                      | Upper Light Vessel, Hope, ....        | W.toS. variable. Cloudy, ..                                             | 21.26   | 88.07   | 29.54 | ..    | ..    |                                                        |
|                      | Lower Light Vessel, Beacon, ..        | NE.toENE. Cloudy & unsettled,                                           | 21.04   | 88.27   | ..    | ..    | ..    | Heavy swell.                                           |
|                      | Jane Pilot Vessel, ....               | ENE.toESE. Light & variable<br>fine weather, ..                         | 21.00   | 88.23   | ..    | ..    | ..    | At anchor.                                             |
|                      | H. C. Ship Amherst, ....              | Variable sharp squalls from SE.<br>toNE. with rain, ..                  | 20.56   | ..      | ..    | ..    | ..    | { Sharp lightning to<br>NE.                            |
|                      | Saugor Pilot Vessel, ..               | NNE.toN. and cloudy to E. ..                                            | 20.28   | 87.32   | ..    | ..    | ..    | { At anchor, A.M. winds<br>SE. to southward.           |
|                      | At Pooree, or Juggernaut Pagoda, .... | .....                                                                   | 19.48   | 85.45   | ..    | ..    | ..    |                                                        |
|                      | John William Dare, ....               | Fine and clear, ..                                                      | 18.44   | 93.50   | 29.75 | ..    | 84    | { At anchor off Che-<br>duba.                          |
|                      | Mary Somerville, ....                 | NNE. to WNW. Light air, very<br>hot weather, ..                         | 18.13   | 85.17   | 29.65 | 29.78 | 86    |                                                        |
|                      | Justina, ....                         | .....                                                                   |         |         |       |       |       | No Logs obtained.                                      |
|                      | Ann Lockerby, ....                    | .....                                                                   |         |         |       |       |       |                                                        |
|                      | Eden, ....                            | .....                                                                   |         |         |       |       |       |                                                        |
|                      | At Masulipatam, ....                  | .....                                                                   | 16.10   | 81.00   | 29.70 | ..    | 85    |                                                        |
|                      | Nine, ....                            | W.bS. Strong gale with hea-<br>vy squalls and rain, ..                  | 14. 7   | 85.28   | 28. 7 | ..    | 82    |                                                        |
|                      | Elizabeth, ..                         | .....                                                                   |         |         |       |       |       |                                                        |
|                      | Jumna, ....                           | W.toWSW. Freshening to a<br>gale. Dark gloomy wea-<br>ther, ..          | 12.25   | 85. 0   | ..    | ..    | ..    | { Bar. falling. Much<br>lightning to NW.<br>N. and NE. |
|                      | Susan, ....                           | W.bN.toWSW. Hard gale with<br>heavy squalls and rain, ....              | 14. 2   | 91.14   | 29.50 | 29.40 | 78    |                                                        |
|                      | Lady Macnaghten, ..                   | W.bS.toSW.bS. a very severe<br>gale, hove too under storm<br>sail, .... | 13.50   | 88.00   | ..    | ..    | ..    | { Heavy sea. Ship-<br>ping water over all.             |
|                      | Petrel, ....                          | WSW. Strong breezes and hazy,                                           | 5.13    | 85.20   | 29.30 | ..    | 92    |                                                        |

| Date.     | Names of Vessels and Places.   | Wind and Weather.                                                 | Lat. N. | Lon. E. | Bar.  | Simp. | Ther. | Remarks.                                                                                                                                                                                         |
|-----------|--------------------------------|-------------------------------------------------------------------|---------|---------|-------|-------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| June 2nd. | Calcutta, .....                | E.S. Heavy clouds and passing squalls with rain. ....             | 22.34   | 88.22   | 29.47 | ..    | 90.   |                                                                                                                                                                                                  |
| ..        | Diamond Harbour, ..            | Variable, cloudy and rain. ....                                   | 22.11   | 88.11   | ..    | ..    | 83.   |                                                                                                                                                                                                  |
| ..        | Kedgerie, ..                   | Northerly with Easterly squalls, cloudy and rain, .....           | 21.52   | 87.59   | ..    | ..    | 83.   | { Gains, thunder and lightning.                                                                                                                                                                  |
| ..        | Upper Light Vessel, Hope, ...  | Northerly wind, with heavy squalls from Eastward, ..              | 21.26   | 88.07   | 29.52 | ..    | ..    |                                                                                                                                                                                                  |
| ..        | Lower Light Vessel, Beacon, .. | E.N.E. North breezes but threatening a gale, ..                   | 21.04   | 88.27   | ..    | ..    | ..    | { At Anchor; strong set to the Westward.                                                                                                                                                         |
| ..        | Jane Pilot Vessel, ....        | E.N.E. to N.N.E. in heavy squalls and rain. ....                  | 20.56   | 88.23   | ..    | ..    | ..    |                                                                                                                                                                                                  |
| ..        | H. C. Ship Amherst,            | N.E. to E. Squally and threatening rain. ....                     | 20.43   | 87.25   | ..    | ..    | ..    |                                                                                                                                                                                                  |
| ..        | Krishna Pilot Vessel,          | Squally from the Eastward, ..                                     | 20.28   | 87.32   | ..    | ..    | ..    | At anchor.                                                                                                                                                                                       |
| ..        | Saugor Pilot Vessel, ..        | Squally from the Eastward, ..                                     | 19.48   | 85.45   | ..    | ..    | ..    |                                                                                                                                                                                                  |
| ..        | At Pooree, or Juggernaut,      | S.B.E. Strong breezes, squalls and dark threatening weather. .... | 18.44   | 93.50   | 29.40 | ..    | 82.   | { At anchor at Cheduba. Bar. falling to 29.30; p.m. Heavy sea from Southward. p.m. Severe squalls from N.E. car. away from N.E. topmast and F. & Main T. G. Mast. No Logs for this day obtained. |
| ..        | John William Dare, ..          | Lt. breezes W.N.W. to fresh from North. ....                      | 18.56   | 85.56   | 29.61 | 29.73 | 85.   |                                                                                                                                                                                                  |
| ..        | Mary Somerville, ....          | Blowing fresh W.N.W. to S.S.W. Drizzling rain. ....               | 16.10   | 81.00   | 29.70 | ..    | 88.   |                                                                                                                                                                                                  |
| ..        | At Masulipatam,                | W.B.S. Heavy gale, severe squalls and rain. ....                  | 16.7    | 85.52   | 28.6  | ..    | 83.   |                                                                                                                                                                                                  |
| ..        | Nine, ....                     | Severe gale from S.W. ....                                        | 16.00   | 88.00   | ..    | ..    | ..    | { Heavy cross sea; stern stove in! bore up.                                                                                                                                                      |
| ..        | Elizabeth, ..                  | West to W.S.W. Gale and rain. ....                                | 15.20   | 85.30   | ..    | ..    | 79.   |                                                                                                                                                                                                  |
| ..        | Jumna, ....                    | Moderate from N.W. ....                                           | 16.20   | 84.30   | ..    | ..    | ..    |                                                                                                                                                                                                  |
| ..        | Mobile, ..                     | W.B.S. to W.S.W. Hard gale, violent squalls and rain, .....       | 14.47   | 91.47   | 29.38 | ..    | ..    | Tremendous cross sea.                                                                                                                                                                            |
| ..        | Susan, ....                    |                                                                   |         |         |       |       |       |                                                                                                                                                                                                  |

| Date,<br>Civil time. | Names of Vessels and Places. | Wind and Weather.                                                                                                          | Lat. N. | Lon. E. | Bar.  | Simp. | Ther. | Remarks.                                                              |
|----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------|---------|-------|-------|-------|-----------------------------------------------------------------------|
| June 2nd.<br>Noon    | Lady Macnaghthen, ..         | W. b. S. to SW. b. S. Very severe gale. Hove too under storm sail.                                                         | 14.10   | 88.00   | ..    | ..    | ..    | Heavy sea.                                                            |
| June 3rd.<br>Monday, | Petrel, ..                   | W S W. to S W. Blowing hard.                                                                                               | 8.31    | 85.50   | 29.00 | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | E. b N. Fresh gale, heavy squalls and rain at times, ..                                                                    | 22.34   | 88.22   | 29.43 | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Diamond Harbour, ..          | NE. breezes, frequent rain, ..                                                                                             | 22.11   | 88.11   | ..    | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | Heavy squalls NE. to East, rain and unsettled appearance.                                                                  | 21.52   | 87.59   | ..    | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | Strong E. S. E. winds inclining to a gale at ENE. ..                                                                       | 21.26   | 88.07   | 29.41 | ..    | ..    | Gale increasing rapidly p. m. E. to ENE.                              |
| Monday,<br>June 3rd. | Calcutta, ..                 | Increasing to a moderate gale from E N E. heavy squalls, NE. Strong and increasing gales, with rain; threatening to NE. .. | 21.04   | 88.27   | ..    | ..    | ..    | Heavy sea on.                                                         |
| Monday,<br>June 3rd. | Calcutta, ..                 | Jane Pilot Vessel, ..                                                                                                      | 21.80   | 88.23   | ..    | ..    | ..    | At anchor.                                                            |
| Monday,<br>June 3rd. | Calcutta, ..                 | H. C. Ship Amherst, ..                                                                                                     | ..      | ..      | ..    | ..    | ..    | Sea rising fast.                                                      |
| Monday,<br>June 3rd. | Calcutta, ..                 | Krishna Pilot Vessel, ..                                                                                                   | 20.37   | 87.26   | ..    | ..    | ..    | Cross sea.                                                            |
| Monday,<br>June 3rd. | Calcutta, ..                 | Sarah, ..                                                                                                                  | 20.30   | 88.02   | ..    | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | Saugor Pilot Vessel, ..                                                                                                    | 20.28   | 87.32   | ..    | ..    | ..    | At anchor, hvy. swell from S E. gale freshg. from N E. at midnigh. t. |
| Monday,<br>June 3rd. | Calcutta, ..                 | At Pooree, or Juggernaut, ..                                                                                               | 19.48   | 85.45   | ..    | ..    | ..    | At anchor Cheduba p. m. gale abating; Br. rising; rain & hvy. sea.    |
| Monday,<br>June 3rd. | Calcutta, ..                 | John William Dare, ..                                                                                                      | 18.44   | 93.50   | 29.50 | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | Mary Somerville, ..                                                                                                        | 19.00   | 85.29   | 29.25 | 29.10 | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | Justina, ..                                                                                                                | 19.14   | 86.06   | 29.40 | ..    | ..    | No log.                                                               |
| Monday,<br>June 3rd. | Calcutta, ..                 | Ann Lockerby, ..                                                                                                           | ..      | ..      | ..    | ..    | ..    | Barometer falling.                                                    |
| Monday,<br>June 3rd. | Calcutta, ..                 | Eden, ..                                                                                                                   | 18.22   | 86.01   | 29.69 | ..    | ..    |                                                                       |
| Monday,<br>June 3rd. | Calcutta, ..                 | At Masulipatam, ..                                                                                                         | 16.10   | 81.00   | 28.6  | ..    | ..    |                                                                       |

Lat. 19.53 N.  
Long. 89.45 E.  
Hurricane about the Centre of the Hurricane about Kedgeeree, ..

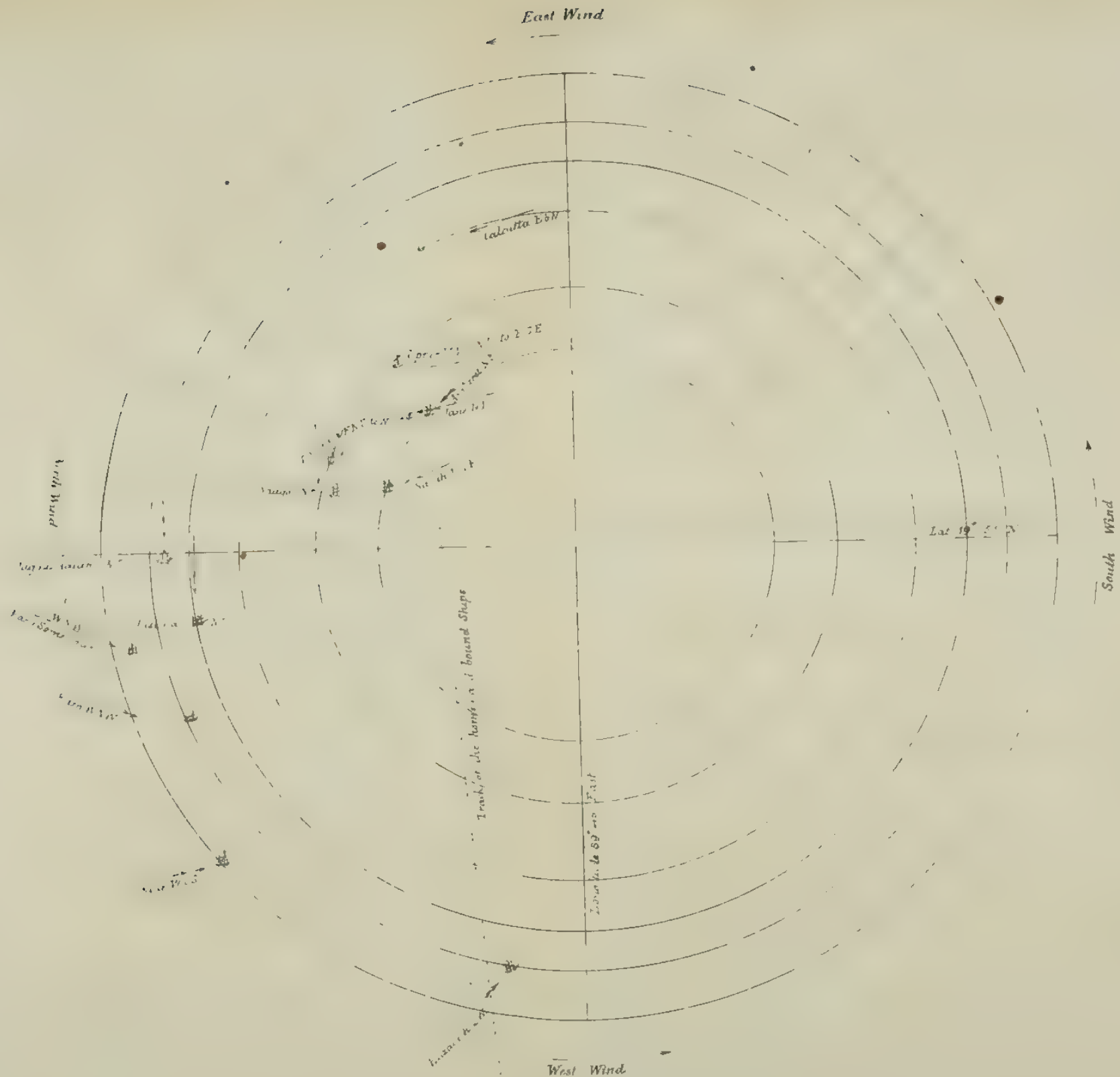
(Continued.)

| Date,<br>Civil time.                                                                               | Names of Vessels and Places.                      | Wind and Weather.                                                                   | Lat. N. | Lon. E. | Bar.  | Simp. | Ther.                                                                                                                                                                                       | Remarks.                                                                                       |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|---------|---------|-------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Monday,<br>June 3rd.<br>(Continued.)                                                               | Nine, ....                                        | Strong gale and heavy squalls<br>W.bS. ....                                         | 17..00  | 86..16  | ..    | ..    | ..                                                                                                                                                                                          | } Scudding for a port<br>no log.                                                               |
|                                                                                                    | Elizabeth, .. ..                                  | Gale at SW. ....                                                                    | ..      | ..      | ..    | ..    | ..                                                                                                                                                                                          |                                                                                                |
| Tuesday,<br>June 4th.<br>At Noon.<br>Centre of the<br>Hurricane a-<br>bout<br>19-36 N.<br>88-10 E. | Jumna, .. ..                                      | Heavy gale from W. to WSW.                                                          | 16..40  | 85..30  | ..    | ..    | ..                                                                                                                                                                                          | } Lightg. & ceaseless<br>rain, awfully dark to<br>N.W. & N. wind of-<br>fering to shift there. |
|                                                                                                    | Mobile, ....                                      | Strong gale and heavy gusts<br>from the Westward, ..                                | 15..00  | 84..00  | 29-40 | ..    | ..                                                                                                                                                                                          |                                                                                                |
|                                                                                                    | Laurel Amelia, .. ..                              | Westerly drizzling rain and<br>strong gales, ....                                   | ..      | ..      | ..    | ..    | ..                                                                                                                                                                                          |                                                                                                |
|                                                                                                    | Susan, .. ..                                      | W <sup>1</sup> / <sub>2</sub> S. W.bS. Hard gale, vio-<br>lent squalls and rain, .. | 15..00  | 92..14  | 29-35 | ..    | 80                                                                                                                                                                                          | } Heavy sea.                                                                                   |
|                                                                                                    | Lady Macnaghten, .. ..                            | W.bS. to SW.bS. Very severe<br>gale; hove too under storm<br>sail. ....             | 14..25  | 88..00  | ..    | ..    | ..                                                                                                                                                                                          |                                                                                                |
|                                                                                                    | Petrel, .. ..                                     | W.bS. Hard gales. ..                                                                | 11..26  | 85..24  | 29-48 | ..    | 95                                                                                                                                                                                          |                                                                                                |
|                                                                                                    | Calcutta, ....                                    | East, heavy squalls and gusts<br>with rain, ....                                    | 22..34  | 88..22  | 29-40 | ..    | 86                                                                                                                                                                                          |                                                                                                |
|                                                                                                    | Diamond Harbour, ....                             | NNE. Strong breezes, frequent<br>rain, ....                                         | 22..11  | 88..11  | ..    | ..    | 84                                                                                                                                                                                          |                                                                                                |
|                                                                                                    | Kedgeree, ....                                    | Heavy Easterly squalls, rain<br>and unsettled weather, ..                           | 21..52  | 87..59  | ..    | ..    | 85                                                                                                                                                                                          |                                                                                                |
| Upper Light Vessel, Hope, ....                                                                     | ESE. Heavy gale and rain, ....                    | 21..26                                                                              | 88..07  | 29-33   | ..    | ..    | } Mdnight, veering to<br>SSE. Heavy sea on,<br>gloomy weather.<br>} Sea washing over<br>every thing; gloomy<br>appearance all round<br>(At anchor; dark<br>gloomy weather and<br>heavy sea. |                                                                                                |
| Lower Light Vessel, Beacon, ..                                                                     | ESE. to SE. do. do. rain. ....                    | 21..04                                                                              | 88..27  | ..      | ..    | ..    |                                                                                                                                                                                             |                                                                                                |
| Jane Pilot Vessel, ....                                                                            | From E. to ESE. and SE.<br>Hard gale and rain, .. | 21..00                                                                              | 88..23  | ..      | ..    | ..    |                                                                                                                                                                                             |                                                                                                |
| H.C. Ship Amherst, ....                                                                            | ENE. A hard gale and rain, ....                   | ..                                                                                  | ..      | ..      | ..    | ..    | } Under bare poles. At<br>4 P.M. a hurricane at<br>SSE. tremendous<br>cross sea.                                                                                                            |                                                                                                |



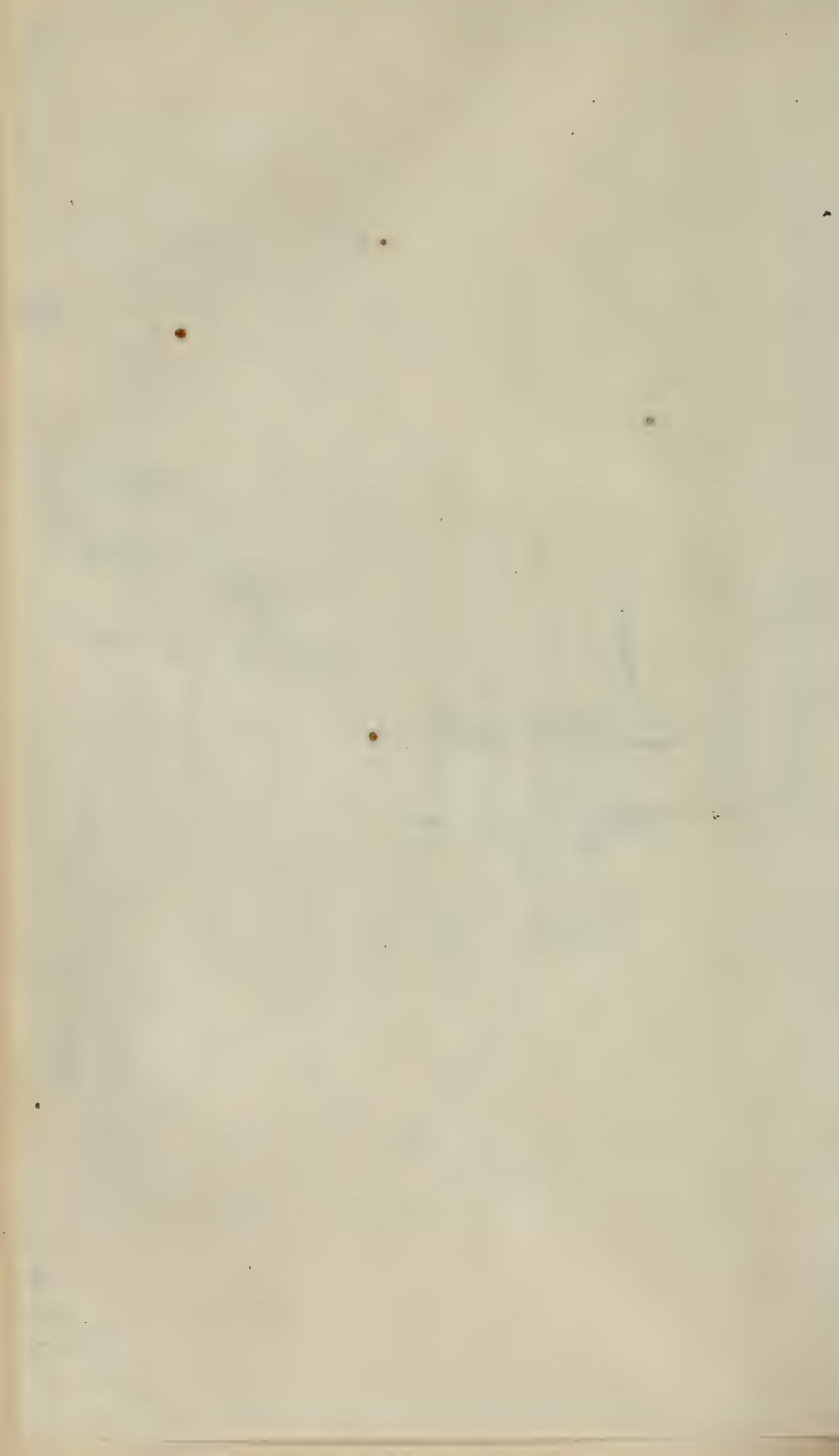
| Date,<br>Civil time,                 | Names of Vessels and Places,   | Wind and Weather.                                                                                         | Lat. N. | Lon. E. | Bar.             | Simp.               | Ther.                                                                                | Remarks.                                                                                                   |
|--------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------|---------|---------|------------------|---------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Tuesday,<br>June 4th.<br>(Continued) | Krishna Pilot Vessel, ....     | NNW. to NNE. Fresh gales,<br>hard squalls, ....                                                           | 20..10  | 87..15? | ..               | ..                  | ..                                                                                   | { High crosssea, stood<br>off land.                                                                        |
|                                      | Sarah, ....                    | ESE. Hard gales with rain, ....                                                                           | ..      | ..      | { 28.88<br>28.56 | 8. P.M.<br>midnight | 28                                                                                   | { 2 P. M. Wind veered<br>to the South.                                                                     |
|                                      | Saugor Pilot Vessel, ...       | NE. Hard gale, ....                                                                                       | 20..28  | 87..32  | ..               | ..                  | ..                                                                                   | At anchor, heavy sea.                                                                                      |
|                                      | At Pooree, or Juggernaut, .... | North. Hard gale, incessant rain,                                                                         | 19..48  | 85..45  | ..               | ..                  | ..                                                                                   | { At anchor at Che-<br>duba. 5 P. M. Shifted<br>suddenly to the W.<br>& veered gradually<br>to SW.         |
|                                      | John William Dare, ....        | South, moderate, ....                                                                                     | 18.44   | 93..50  | 29.75            | ..                  | 85                                                                                   | { Heavy sea from SE.<br>P. M. gale increasing<br>from SW.                                                  |
|                                      | Mary Somerville, ....          | W. Fresh gales with heavy rain,                                                                           | 19..16? | 85..18? | 29.15            | 29.30               | 86                                                                                   | { Lying with yard<br>arms at times in the<br>water; tremendous<br>sea running; lost a<br>boat washed away. |
|                                      | Justina, ....                  | WSW. Severe gale veering<br>to South Westward, P. M. ....                                                 | 18.47?  | 85..40? | ..               | ..                  | ..                                                                                   | { Gale increasing.                                                                                         |
|                                      | Ann Lockerby, ....             | N.toNNW. Commenced to blow<br>heavy and rain, .....                                                       | 18.55   | 86..30  | 28.75            | ..                  | ..                                                                                   |                                                                                                            |
|                                      | Eden, ....                     | SW.bW. Hard gale increas-<br>ing to a hurricane at WSW. ..                                                | ..      | ..      | 29.10            | ..                  | ..                                                                                   |                                                                                                            |
|                                      | At Masulipatam. ....           | WNW. blowing very fresh, ....                                                                             | 16..10  | 81..00  | 29.63            | ..                  | 83                                                                                   |                                                                                                            |
|                                      | Nine, ....                     | W.bS. moderating to fresh gale,                                                                           | 17..39  | 86..43  | ..               | ..                  | ..                                                                                   |                                                                                                            |
|                                      | Elizabeth, ....                | From W.toWSW. Gale contin-<br>uing and heavy squalls. ....                                                | 17..10  | 85..35  | 29.19            | ..                  | ..                                                                                   | { Preparing for bad<br>weather.                                                                            |
|                                      | Jumna, ....                    | Heavy Westerly gales, ....                                                                                | 15.50   | 84.40   | ..               | ..                  | ..                                                                                   | { A current has been<br>setting 20, to the SW.<br>for the last 4 days.                                     |
|                                      | Laurel Amelia, ....            | West, hard gales, ....                                                                                    | 16.56   | 82..58  | ..               | ..                  | ..                                                                                   |                                                                                                            |
|                                      | Susan, ....                    | WSW. Hard gale violent squalls<br>W.bS.toSW.bS. Very severe<br>gale; hove too under storm<br>sails, ..... | 16..19  | 89..53  | 29.40            | ..                  | ..                                                                                   | { Current of 32 per<br>day to the SW. for<br>the last 4 days.                                              |
| Lady Macnaghten, ....                | W.bS.toSW.bS. Hard gales, hazy | 14.51                                                                                                     | 88..16  | 29.17   | ..               | ..                  | { Sea confused, and<br>coming at times<br>from the Northward,<br>shipping much water |                                                                                                            |
| Petrel, ....                         |                                | 13..44                                                                                                    | 84..50  | 29.43   | ..               | 86                  |                                                                                      |                                                                                                            |

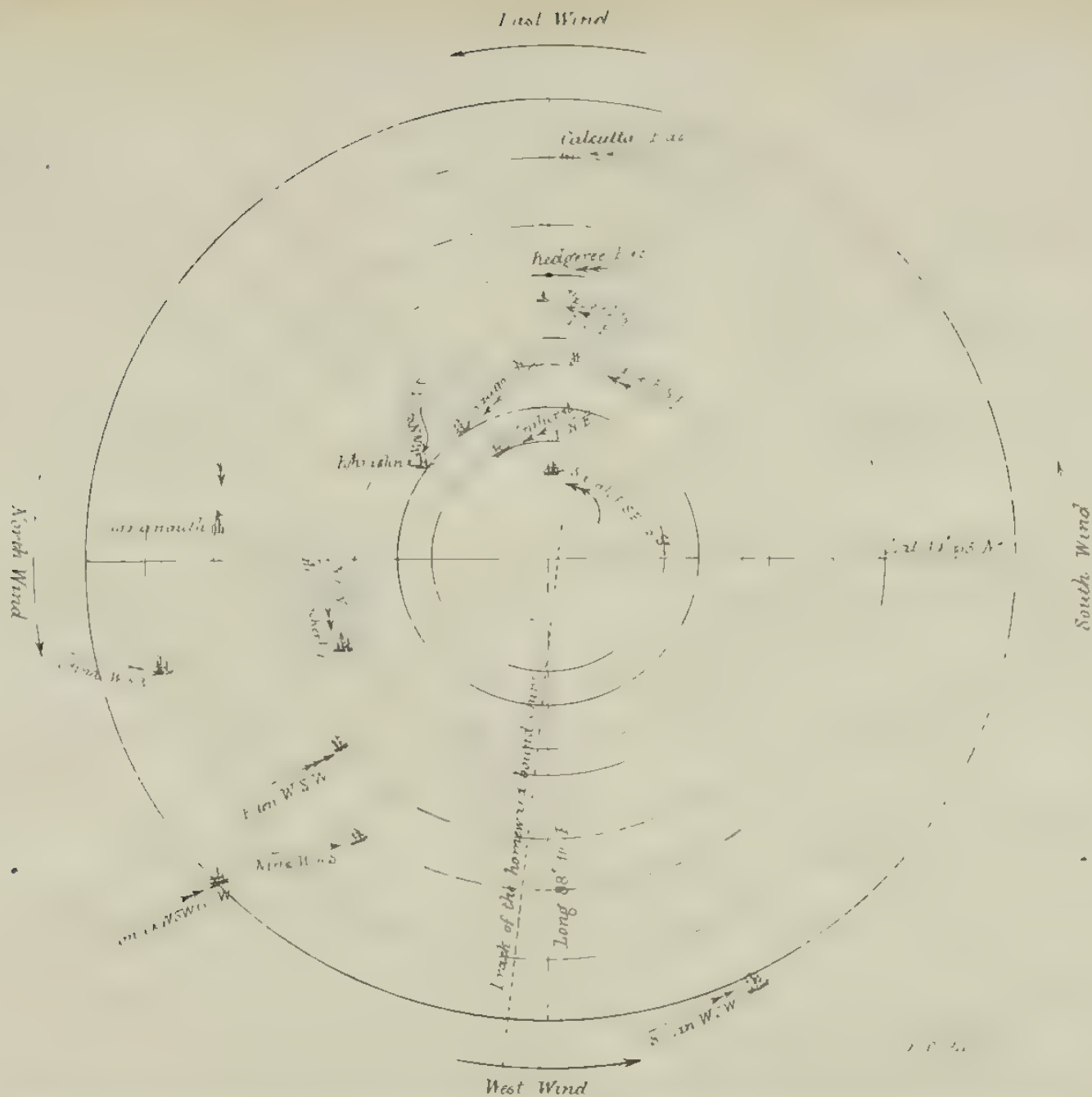
| Date,<br>Civil time.                                                                      | Names of Vessels and Places.                             | Wind and Weather.                                             | Lat. N. | Lon. E. | Bar.  | Simp. | Ther.                                                       | Remarks.                                                  |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------|---------|---------|-------|-------|-------------------------------------------------------------|-----------------------------------------------------------|
| June 5th.<br>Noon, Centre<br>of the Hurri-<br>cane, about<br>Lat. 19-25N.<br>Lon. 87-1 E. | Calcutta, ....                                           | S. b E. Veering to Southward,<br>strong squalls and rain, ..  | 22.34   | 88.22   | ..    | ..    | ..                                                          | { No observation for<br>Barometer.                        |
|                                                                                           | Diamond Harbour, ....                                    | E. to SSE. Strong gales & squalls                             | 22.11   | 88.11   | ..    | ..    | 84                                                          |                                                           |
|                                                                                           | Kedgeree, ...                                            | SE. to S. smart gale and rain,                                | 21.52   | 87.59   | ..    | ..    | 85                                                          | Heavy sea.                                                |
|                                                                                           | Upper Light Vessel, Hope, ....                           | South; gale decreasing, rain,                                 | 21.26   | 88.07   | 29.46 | ..    | ..                                                          |                                                           |
|                                                                                           | Lower Light Vessel, Beacon, ....                         | S S E. to South, blowing hard<br>in squalls, .....            | 21.04   | 88.27   | ..    | ..    | ..                                                          | Heavy sea.                                                |
|                                                                                           | Jane Pilot Vessel, ....                                  | SSE. to S. Heavy squalls, ....                                | 21.00   | 88.23   | ..    | ..    | ..                                                          | At anchor.                                                |
|                                                                                           | H. C. Ship Amherst, ....                                 | Gale moderating from SSW. ..                                  | 20. 3   | 87.00   | ..    | ..    | ..                                                          | Heavy cross sea.                                          |
|                                                                                           | Krishna Pilot Vessel, ....                               | North to West and SW!<br>hard gales. ....                     | 19.40   | 86.27   | ..    | ..    | ..                                                          | { 1 P.M. Wind veered<br>from N. to SW. fu-<br>rious gale. |
|                                                                                           | Sarah, ....                                              | E S E. Moderating and veer-<br>ing round to southward ...     | 19.42   | ..      | ..    | ..    | ..                                                          |                                                           |
|                                                                                           | Saugor Pilot Vessel, ....                                | ESE. Hard gale, ....                                          | 20.28   | 87.32   | ..    | ..    | ..                                                          | { At anchor; P.M. SE.<br>& SSE. at midnight.              |
|                                                                                           | At Pooree, or Juggernaut, ....                           | S W. Gale continuing, cloudy<br>but no rain, .....            | 19.48   | 85.45   | ..    | ..    | ..                                                          |                                                           |
|                                                                                           | Mary Somerville, ....                                    | S W. Strong breezes increas-<br>ing to a severe gale to South | ..      | ..      | ..    | ..    | ..                                                          | { Veering to SW; P.M.<br>Sea from the S. W.               |
|                                                                                           | Justina, ....                                            | SW. Moderating, .....                                         | 18.15   | 85.11   | ..    | ..    | ..                                                          |                                                           |
|                                                                                           | Ann Lockerby, ..                                         | Hurricane at N N W. shifting<br>suddenly to W S W. at noon.   | 19. 5   | 87. 6   | 28.15 | ..    | ..                                                          | ..                                                        |
|                                                                                           | Eden, ....                                               | SW. Moderating. ....                                          | 18. 1   | 86.52   | 29.25 | ..    | ..                                                          |                                                           |
|                                                                                           | At Masulipatam, ....                                     | WNW. Blowing very fresh, ..                                   | 16.10   | 81.00   | 29.60 | ..    | ..                                                          | ..                                                        |
|                                                                                           | Nine, ....                                               | SW. Fresh gale and heavy<br>squalls, .. ..                    | 18.39   | 86.18   | ..    | ..    | ..                                                          |                                                           |
|                                                                                           | Elizabeth, ..                                            | .....                                                         | ..      | ..      | ..    | ..    | ..                                                          | ..                                                        |
| Jumna, ....                                                                               | .....                                                    | ..                                                            | ..      | ..      | ..    | ..    |                                                             |                                                           |
| Mobile, ....                                                                              | Severe westerly gale, ....                               | 16.20                                                         | 85.20   | ..      | ..    | ..    | ..                                                          |                                                           |
| Laurel Amelia, ....                                                                       | Westward, blowing a hurricane,                           | 17.22                                                         | 83.44   | ..      | ..    | ..    |                                                             |                                                           |
| Susan, ....                                                                               | WSW. and SW. moderating, ..                              | 17.59                                                         | 88.34   | 29.40   | 29.56 | 83    | ..                                                          |                                                           |
| Lady Macnaghten, ....                                                                     | WSW. Moderating, .. ..                                   | ..                                                            | ..      | ..      | ..    | ..    |                                                             |                                                           |
| Petrel, ....                                                                              | W S W. to S W. Hard gales<br>but moderating, hazy, .. .. | 16.22                                                         | 84.34   | 29.38   | ..    | 86    | { At 4 P.M. Bar. 29.32<br>A confused sea from<br>the North. |                                                           |



N<sup>o</sup> 1 Diagram of the Hurricane on the 3<sup>rd</sup> June 1859 reduced to half scale from the General Chart.  
 outer circle 550 miles in diameter.

Time, Noon





N<sup>o</sup> II Diagram of the Hurricane of the 24<sup>th</sup> June 1859 reduced to half-scale (i.e. one general hour).  
Outer circle 375 miles in diameter

Time. Noon





1. Diagram of the Hurricane on June 13<sup>th</sup> June 14<sup>th</sup> 1853 reduced to half size from the original drawing  
 Outer circle 360 miles in diameter

Time Noon